APPENDIX 2 – PART 139 CERTIFICATION

INTRODUCTION

This paper describes the purpose of commercial airport certification requirements, under 14 CFR 139, Certification of Airports (Part 139), and the current and future requirement for certification at Groton-New London Airport (GON). It is an essential determination because it defines the classification of GON, which determines a wide-range of administrative, safety, and operational requirements required at commercial service airports. Included in this report is an analysis of the airport's existing Airport Rescue and Fire Fighting (ARFF) index, equipment, and work force requirements.

BACKGROUND

The Federal Aviation Administration (FAA), through the National Plan of Integrated Airports System (NPIAS) classifies airports by size and function. The NPIAS includes all commercial service, reliever (high capacity general aviation airports in metropolitan areas), and select general aviation airports.

Unlike reliever and general aviation airports, commercial service airports (regardless of size) must be certificated by the FAA and operate under rules specified in Part 139. The certification is granted through an airport operating certificate (AOC) that serves to ensure safety in air transportation. To obtain an AOC, an airport must agree to certain operational and safety standards, providing for such things as firefighting, and rescue equipment. These requirements vary depending on the size of the airport and the type of flights available.

PART 139 DEFINED

Part 139 is a federal statute that serves to ensure safety in air transportation, with the key component being the issuance of an AOC.

Application of Part 139, which is important in the assessment of GON, are rules governing the certification and operation of U.S. airports serving (1) scheduled passenger-carrying operations of an air carrier operating aircraft designed for more than nine passenger seats; and (2) unscheduled passenger-carrying operations of an air carrier operating aircraft designed for at least 31 passenger seats. This application requires an understanding of key terms as applicable to Part 139: air carrier aircraft, large air carrier aircraft, small air carrier aircraft, scheduled operations, unscheduled operations, charter, and public charter.

- **Air carrier aircraft** means an aircraft that is being operated by an air carrier and is categorized as either a large air carrier aircraft if designed for at least 31 passenger seats or a small air carrier aircraft if designed for more than 9 passenger seats but less than 31 passenger seats, as determined by the aircraft type certificate issued by a competent civil aviation authority.

- **Scheduled operation** means any common carriage passenger-carrying operation for compensation or hire conducted by an air carrier for which the air carrier or its representatives offers in advance the departure location, departure time, and arrival location. It does not include any operation that is conducted as a supplemental operation under 14 CFR Part 121 or public charter operations under 14 CFR Part 380 (see Charter Flight and Public Charter below).

- **Unscheduled operation** means any common carriage passenger-carrying operation for compensation or hire, using aircraft designed for at least 31 passenger seats, conducted by an air carrier for which the departure time, departure location, and arrival location are specifically negotiated with the customer or the customer's representative. This includes any passenger-carrying supplemental operation conducted under 14 CFR Part 121 and any passenger-carrying public charter operation conducted under 14 CFR Part 380.

- **Charter flight** means a flight operated under the terms of a charter contract between a direct air carrier and its customer. It does not include scheduled air transportation, scheduled foreign air transportation, or non-scheduled cargo air transportation, sold on an individually ticketed or individually way billed basis.

- **Public Charter** means a one-way or round-trip charter flight to be performed by one or more direct air carriers that is arranged and sponsored by a charter operator.

AIRPORT CLASSIFICATIONS

Commercial service airports are classified according to the type of service they handle. Table 1 shows the types of air carrier operations that each Part 139 airport class can serve. The table lists the type of air carrier operation (schedule or unscheduled, large and small aircraft) that each of the four airport classifications can serve. For example, a Class I airport is certified for all types of aircraft and operations, while a Class IV airport can only service unscheduled large air carrier aircraft.

FAA requires airports that desire to serve operations of specified air carrier aircraft to comply with certain safety requirements in order to obtain an AOC. The FAA revised Part 139 in 2004, because of changes in industry practices and technology. It was the first major revision since 1987. The majority of changes had no impact on GON particularly because US Airways Express scheduled service concluded in October 2003. The termination of this commuter service meant that GON was no longer required to staff police and ARFF personnel for air carrier flights. Air carrier service has not yet resumed which means, in fact, the cost of staffing the airport has been reduced.

In all likelihood, the departure of US Air was a direct result of the aftermath of the post 9/11 events. As addressed later in this report, all scheduled service was severely impacted,

and non-primary, non-hub airport like GON were hit the hardest resulting in suspension of all commercial activities at many similarly size and type airports; especially those operating without Essential Air Service subsidies.

Table 1 – Airport Classifications

Type of Air Carrier Operation	Airport Class			
	I	II	III	IV
Scheduled Large Air Carrier Aircraft	✓			
Unscheduled Large Air Carrier Aircraft	✓	✓		✓
Scheduled Small Air Carrier Aircraft	✓	✓	✓	

GON operates under a Class IV AOC, meaning the facility is certificated for unscheduled large air carrier aircraft. This classification is a holdover based on previous air carrier service that ended with the departure of U.S. Airways Express circa 2002. In all likelihood, the departure of U.S. Air was a direct result of the aftermath of the post 9/11 events. As addressed later in this report, all scheduled service was severely impacted, and non-primary, non-hub airports like GON were hit the hardest resulting in suspension of all commercial activities at many similarly size and type airports; especially those operating without Essential Air Service (EAS) subsidies.[1]

However, under the revised Part 139 rule, four classes of airports were developed. The classifications are based on two components; the type of operations (scheduled or unscheduled), and the size of aircraft (large or small), as defined earlier. GON operates under a Class IV AOC, meaning the facility is certificated for unscheduled large air carrier aircraft.

The airport classification defines the level of administrative, safety and operational requirements at the airport. These requirements identify not only the types of services required, such as aircraft rescue and firefighting (as discussed earlier), but also the numbers and type of equipment, the capacities of firefighting retardant, etc. Logically, the various AOC classes correlated to various operating and maintenance costs, as well as capital improvement costs, including runway safety area improvements which were installed for the primary runway at GON in 2011.

Today, the airport is in the process of implementing an Airport Business Plan. Its primary objective is to identify operational and economic development opportunities with aims to improve the Airport's financial performance and long term viability. This may or may not result in resuming scheduled air carrier operations.

[1] GON is not now, nor was it an EAS airport.

AIRPORT CERTIFICATION MANUAL

The Airport Certification Manual (ACM) serves as the bridge between the requirements of Part 139 and their application to a particular airport, taking into account the airport's size, type/level of activity, and configuration. The ACM provides direction and lines of responsibility in the day -to-day operation of the airport. The ACM details operating procedures to be followed for both routine matters and unusual circumstances or emergencies that may arise. The contents of the manual are designed to meet FAA rules and regulations for airport certification contained in Part 139. It is an FAA requirement that this manual remain current. Revisions to the ACM are made as FAA issues new or amended requirements of Part 139. The FAA must approve any change or amendment to this manual before it can take effect. Likewise, this manual must reflect any changes in operations staff, their responsibilities, or policy changes made by the airport sponsor. Updating the manual is typically responsibility of the airport manager. In essence, it must be kept current at all times.

Groton-New London Airport maintains an ACM. A review of the GON manual indicates it is current, contains all applicable components required by Part 139, as well as appropriate FAA signatures. The airport manager maintain the ACM.

AIRPORT EMERGENCY PLAN

A major component of Part 139 and the ACM is the development and maintenance of an Airport Emergency Plan (AEP) (§139.325).

The AEP provides an overview and procedures for prompt emergency response operations, while minimizing the possibility and extent of personnel injury and property damage on the airport in an emergency. The Plan is developed such that it provides adequate guidance to each person who must implement it, as well as specifying persons responsible for performing specific actions, under specific circumstances. The AEP contains instructions for responding to:

- Aircraft incidents and accidents;
- Bomb incidents;
- Structural fires;
- Fuel fires;
- Natural disasters;
- Hazardous materials and dangerous goods incidents;
- Sabotage, hijack incidents, and other unlawful interference with operations events;
- Power failures; and
- Water rescue situations.

In addition, the AEP provides guidance for media and crowd control, removal of disabled aircraft, family assistance, as well as other related procedures and measures to follow in the event of an accident or incident.

A major component of the AEP is the need for training and exercises. At least once every twelve months, a meeting or exercise must be held with the services and mutual aid agencies. This includes training for airport fire fighting personnel as discussed in the following section on ARFF.

AIRPORT RESCUE AND FIRE FIGHTING (ARFF)

Part 139 (specifically §139.315, 139.317, 139.319 and 139.325) govern the essentials of emergency services response on Part 139 certificated commercial airports. The regulations specify the firefighting equipment, extinguishing agents required, and the operational and emergency requirements including ARFF training requirements. Part 139 certificated airports are classified by indices A through E in accordance with §139.315.[2] The average length of the commercial transport aircraft that utilizes a particular airfield determines an airport's ARFF index. The index category of an airport ultimately determines the type and amount of extinguishing agent necessary to provide fire protection and the number of trucks required to respond to emergency situations as specified in §139.317. The amount of agent and quantity of trucks required by the regulation can directly affect the facility because it ultimately sets the stage for staffing requirements. Index A airports require less equipment and agents then Index E because the lower indexed airports handle fewer aircraft (and passengers) over a given period of time.

Currently the FAA does not set staffing requirements for airports. Part 139 simply states that the airport must provide sufficient staffing and training for the staff that they provide to perform the emergency service response. However, the FAA does encourage airport operators to adhere to the National Fire Protection Association (NFPA) national consensus standards as well as the International Fire Service Training Association (IFSTA) Certification Standards of Oklahoma State University (OK).

GON maintains the necessary equipment and agents consistent with an Index A airport, which consists of two ARFF vehicles housed in the Airport Fire Station building, maintained in a quick response status. ARFF trained personnel consist of four full-time employees who are employed principally as maintenance personnel. The personnel are normally scheduled Monday through Friday (6 am to 6 pm); Saturday and Sunday (7 am to 3 pm).

[2] The Airport Index applies to all airports served by scheduled air carriers operating aircraft with a seating capacity greater than 30 passengers. The index determines the minimum number of ARFF vehicles required and the minimum types and quantities of extinguishing agents carried by those vehicles. For example, Index A requires a minimum of one ARFF vehicle, whereas Index E requires a minimum of three vehicles.

During air carrier operations, at least two ARFF trained personnel are in standby mode from 15 minutes before until 15 minutes after the aircraft operation, with at least one person in the response vehicle on the ARFF ramp.[3]

Consistent with Part 139 and the ACM is the need for training in firefighting, wildlife hazard management, safety and security inspections and other related needs in support of the Airport. This includes providing 7 day a week services. GON is budgeted to provide this service with a staff of five and one half full-time employees; four in maintenance with operations and ARFF duties, a part-time ARFF captain and one in a management position also with operations duties.

SNOW AND ICE CONTROL

While snow and ice control are typical of all airports in northern climates, commercial service airports are held to higher standards. The standards, outlined in §139.313, specify the need for an approved written plan and a speedy response in support of commercial aircraft operations. Unlike ARFF requirements, Part 139 does not specify equipment requirements, personnel training, etc., but it does require a specific plan be implemented (as approved by the FAA), which includes detailed clearing standards and timely removal of ice and snow. Unlike general aviation airports, commercial airports are under added pressure to keep operating areas clear and available to air carrier operators.

The airport has a fleet of snow removal equipment, which is operated by the maintenance staff as necessary to keep snow and ice under control. The current operational plan allows for the prompt removal or control of snow, ice, slush of each of the airport's primary movement areas. Non-movement and other non-primary movement areas are cleared on an as needed basis after the primary areas are contained. Snow and ice events require the full support of the entire maintenance staff as well as the airport manager. The ACM contains specific details.[4]

SELF-INSPECTIONS

Airport inspections carried out by the airport staff are a routine component of Part 139 certification (§139.327). Unlike general aviation airports, commercial service airports must be self-inspected on a regular schedule as approved by the FAA and outlined in the ACM. GON conducts daily safety inspections, and nightly lighting inspections (Monday – Friday). ARFF equipment and vehicles are inspected each morning. Inspections are recorded on an approved form and maintained for 12 months. Unsafe conditions are promptly corrected or action taken to ensure action is taken, and appropriate Notices to Airmen are published with the FAA.

[3] Airport Certification Manual, Section 9, page 9-1 (updated August 7, 2007).
[4] Section 7, page 7-1 (updated December 17, 2007).

Only authorized personnel are permitted to conduct the inspections. The airport manager conducts the training and maintains appropriate records.

PERSONNEL

At the center of all commercial service airports are personnel. Because of the added cost in terms of paperwork, equipment, and service demands, such as ARFF services and snow removal, labor requirements are greater then a general aviation airport of equal size and number of operations. Part 139 (§139.303) requires airports to have sufficient and qualified personnel to comply the statute as well as the requirements of its ACM. Consistent with Part 139 and the ACM is the need for training in fire fighting, security, inspections, and other related areas in support of the airport. This includes providing round-the-clock services, including weekends. GON provides this service with a staff of six full-time employees; four in maintenance and ARFF, and two in administrative positions.

AOC REQUIREMENTS AT GON

The current and future requirement for certification at GON is the principal purpose of this paper. Defining the need for an AOC will determine the level of administrative, safety, and operational requirements, including ARFF equipment and work force requirements.

A brief discussion of the activity type at GON will help clarify the Part 139 certification process. Table 2 lists the average operations, including Air Taxi, during a recent five full calendar years (2003-2007). US Airways flew B1900 turboprop airplanes with nineteen (19) passenger seat commercial service for four round-trips daily to Philadelphia through October 2003. Four charter operators are also included in the air taxi counts. They are: 1) General Dynamics/Electric Boat who, since 2001 to present, operates B1900 turboprops for 1-3 scheduled corporate flights round trip to Newport News, VA and Washington Dulles Airport on weekdays; 2) Pfizer Inc. operated corporate flights from May 2003-June 2008 flying Embraer 135 with 35 maximum passenger loads round trip to Kalamazoo, Kansas sunday to friday; 3) Between the summer of 2006 and 2009, Mohegan Sun, 2nd largest casino in the U.S., contracted with Charter Air Services to fly from and to Republic Airport in Farmingdale, Long Island, New York with an Embraer 120, 30-seat turboprop each thursday through Sunday; and 4) In 2007-2011, Ultimate Jetcharters operated Dornier 30 seat charters between Montreal and GON on some summer weekends using U.S. Customs services. In April 2009, Aviation Technologies, Inc. dba Public Charters.com announced the launch of regularly scheduled public charter air service between GON, Long Island MacArthur-NY airport and Nantucket, MA on summer weekends

Table 2 – Average Operations (2003 – 2007)

Air Carrier	0
Air Taxi (including Charter)	28,356
General Aviation	51,362
Military	4,276
Total	**58,554**

only. Their plan was to offer this service on 30 seat Embraer aircraft operated by Charter Air Transport. However, the service start-up was cancelled due to the downturn in the national economy.

Same as today, the other operations in Table 2 were classified as either general aviation or military, which have no impact on Part 139 or the requirement for an AOC. However, we do not believe withdrawing the AOC is justified at this time. Moreover, a true assessment must first include a review of the past, present and future of the airline industry at GON, followed by conducting outreach and initiatives to bring commercial service to the market area as a destination airport so as to take advantage of southeastern Connecticut's historic coastline location and numerous thriving tourist attractions.

Given the above, the type of operations at GON today does not require an AOC because of one passenger seat! The EMB-120 has 30 passenger seats and the rules for unscheduled large aircraft specify 31 or more passenger seats. However, we do not believe withdrawing the AOC is justified at this time. Moreover, a true assessment must first include a review of the airline industry that existed before the loss of commercial service at GON and the potential return of an air carrier to this market area.

AIRLINE MARKET ADJUSTMENTS

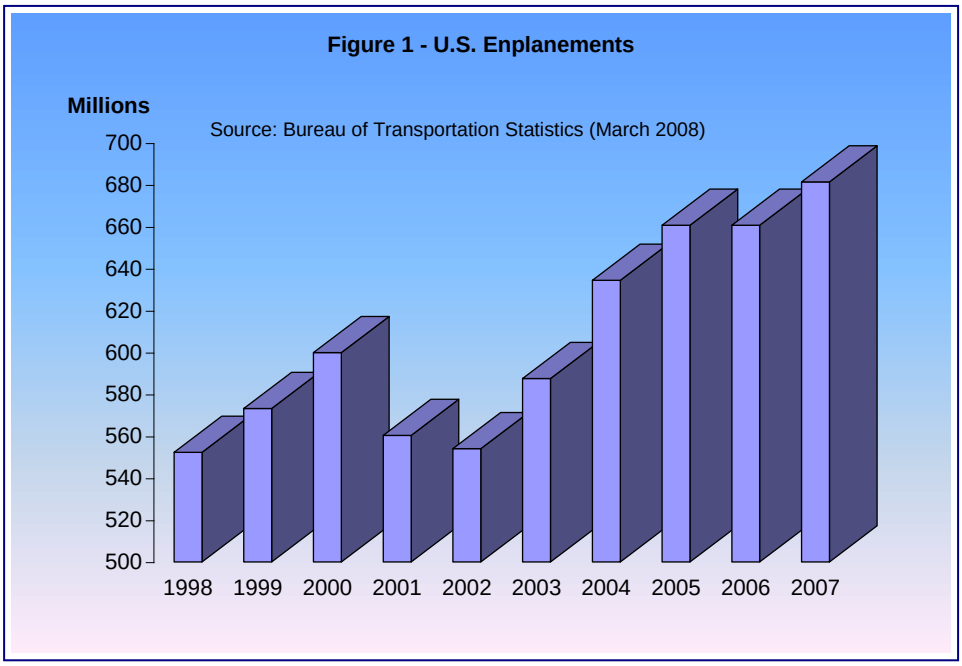
Since 2000, the aviation industry has been battered with the events of 9/11, the spread of Severe Acute Respiratory Syndrome, and record high fuel prices. Over the last seven years, major restructuring and downsizing among the mainline legacy carriers has occurred along with rapid growth among low-cost carriers, and exceptional growth among regional carriers. Legacy carriers have filed for and emerged from bankruptcy protection. Jet fuel, which is an airline's second largest expense, has more than tripled in cost in the past seven years, hampering the ability of the carriers to return to profitability or emerge from bankruptcy. As an example, the airline breakeven price of oil per barrel is $81;[5] while the current market price of oil has exceeded $140 per barrel in 2009, but has since relaxed to under $100.[6]

While the financial outlook for airlines is improving, U.S. airlines still posted losses in 2006, according to the International Air Transport Association. In 2005, U.S. commercial airlines reported a net loss of $11.8 billion with a net loss of more than $37 billion over the last five years, totally erasing the $23 billion that airlines earned between 1995 and 2000. In response, the air carrier airports have adjusted their capital spending plans to reflect the uncertain financial environment for their air carrier tenants. Consequently, airlines posted

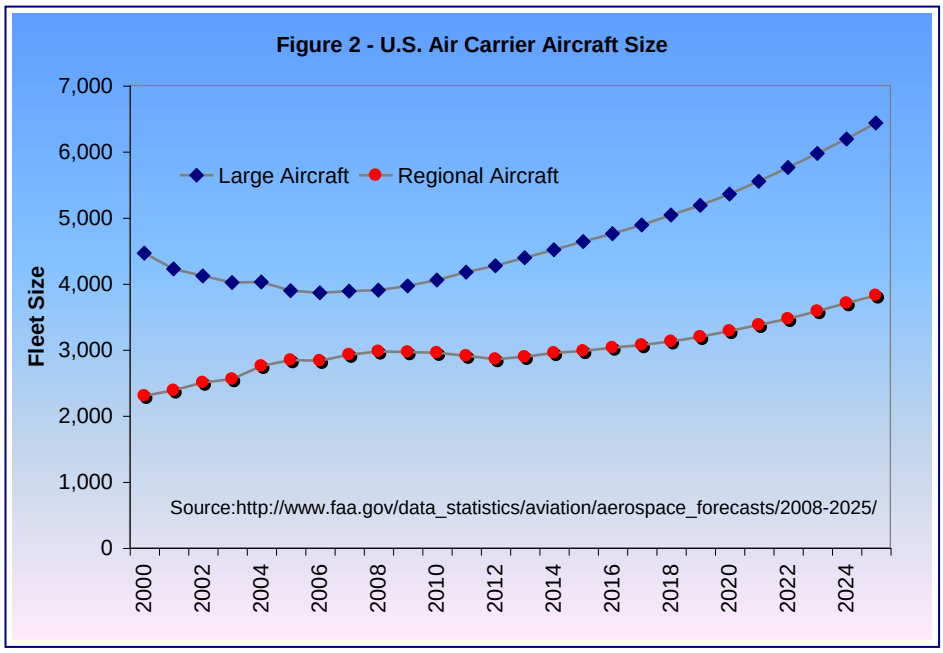
[5] http://www.iata.org/pressroom/facts_figures/fact_sheets/fuel.htm
[6] http://www.bloomberg.com/energy/

their first profit in years in 2007 and are projected to do the same in 2008 (assuming oil prices return to at or below the airlines breakeven price).

Figure 1 illustrates the change in passenger demand on U.S. airlines; before and after 9/11. In 2005, commercial air carrier enplanements rose seven percent and were six percent higher than enplanements in 2000. By 2007, passenger demand growth on U.S. airlines rebounded from a weak year in 2006. System revenue passenger miles and enplanements grew 3.9 and 3.3 percent, respectively. Commercial air carrier domestic enplanements increased 3.1 percent while international enplanements grew 5.1 percent to a record 75.5 million. The system-wide load factor increased to an all-time high of just below 80 percent (79.9 percent) and coupled with a 2.3 percent increase in yield resulted in an industry-wide operating profit for the second year in a row.



As shown, passenger enplanements levels now exceed pre-9/11 levels; but more importantly for the GON market is the shift seen by air carriers from larger aircraft to smaller regional jets, in the 50-70 seat range, which bodes well for smaller airports, such as GON[7] (**Figure 2**). Another important aspect for GON is the growth in start-up airlines, such as Skybus and Jet Blue; two Part 119[8] operators who are working their way successfully into a market once the stronghold of earlier low-cost airlines such as Southwest. The low-cost carriers operate out of airports generally on the fringe of large market facilities, such as Portsmouth, NH, Portland, ME, and Westover, MA, because of lower operation costs at non-hub, non-primary commercial airports.



FUTURE AOC REQUIREMENTS

The assessment discussed in the previous sections raises three important questions. First, if GON does not need an AOC under current conditions, should it continue to maintain the facility at Part 139 standards? Second, will GON require an AOC in the future? Third, what standards should the airport maintain without an AOC; specifically, what workforce, equipment, and airfield standards should the airport maintain?

On a purely economic basis, the answer to the first question is no; the airport does not require an AOC based on current conditions. However, the cost of maintaining the airport to Part 139 safety standards has not been full assessed. The immediate budgetary costs associated with this level of service in the area of personnel have decreased dramatically in recent years. The airport has five full- time employee positions allocated to management,

[7] FAA Aerospace Forecasts, Fiscal Years 2012-2032.
[8] Title 14 CFR Part 119, Certification: Air Carriers and Commercial Operators.

operations, maintenance and ARFF, plus a part time fire captain. A small portion of staffing labor is allocated in support of the AOC, including ARFF standby services when a 48 prior permission request is received for an unscheduled large air carrier operator. Such requests have been very minimal in recent years; and when they do, these services are invoiced by the State. In the meantime, ARFF service is provided by 1-3 maintainer/fire fighter staff on duty each day.

ARFF training and services, a component of commercial operations is not required for general aviation operations, but is required under the current lease with the on-airport Army National Guard helicopter repair operations. A focal point of managerial services is on AOC compliance, including security assessment, training and oversight. Operationally, while the airfield is maintained to Part 139 safety standards, only a small portion of the work force and costs (for examples, some airfield paint purchase and labor; record keeping) are likely attributed strictly to AOC compliance. In short, whether or not AOC compliance is dropped, the airport will still need the same size workforce it has today to maintain an airport of this size to FAA standards.

To answer the second question a study of the airline industry needs is briefly examined. Enplanements and commercial activities nationwide have strongly bounced back since 9/11 (refer to **Figure 1** on page 223). Whether this recovery has enough spin-off to warrant reintroduction of scheduled commercial service at GON depends on a number of factors. This will include assessment of competing service at the other nearby airports. Also considered is GON market demand, potential markets served, reliability, frequency, and aircraft type to be used. If all these factors are favorable to the GON market area, the return of scheduled service is a strong possibility (at least now compared to five/six years ago).

The current casino industry in the region will probably not have much impact on scheduled service because their size will probably not expand appreciably beyond the current market. A negative factor is the three commercial service airports on the fringes of the GON service area, which are well within 45 to 75 minutes by car for residents in Groton-New London metropolitan area (New Haven, Hartford, and Providence).

The answer to the second question may come from an earlier (1998) study on air service development.[9] Although written prior to the 9/11 attacks, several interesting and plausible trends are presented in the study.

[9] Air Service Development Study for Groton-New London Airport, Groton, Connecticut. Prepared by Kiehl Henrickson Group, for Connecticut Department of Transportation – Bureau of Aviation and Ports. September 1998

The executive summary of this report begins with, "Commercial air service at Groton Airport GON has historically struggled, but recently stabilized. There have been many carriers that have come and gone over the years, including Groton-based Pilgrim Airlines in the mid-1980, however, US Airways Express has experienced longevity, and its current success is a starting point." As stated earlier, US Airways Express left the market in 2003and the terminal has been quiet ever since.

The 1998 report goes on to say that the greatest hope for surviving as a commercial air service airport relies on two factors: 1) accepting a "niche" role within the region as a "convenience" airport; and 2) defending and strengthen current US Airways Express service. While the latter is no longer an option, the potential of fulfilling a "niche" market is still viable. The casino industry was not a factor when this 1998 report was written; today it is. While growth projections for either casino are not public knowledge,[10] it may be fair to assume that this commerce is not going away; but will in fact grow. Moreover, this growth is probably the "niche" market GON needs. In all likelihood, this will entail an expansion of charter operations and not a return of scheduled service. While the market is rebounding, the return of scheduled service to GON, even small aircraft in the 10-20-passenger seat range, is unlikely.

RECOMMENDATIONS

Sound planning requires the preservation of options. In the case of GON, it is not recommended to suspend or revoke the AOC at this time. In reviewing the requirements of a Part 139 airport, the current needs for an AOC at Groton, and the preliminary labor, equipment, and service outlays, the following is recommend; an option that would partially preserve the airport's workforce, equipment inventory, and most important, level of operational and service commitment, exclusive of ARFF operational requirements.

1. Fully maintain the status quo for the time being (CTDOT should maintain, at least for now, AOC compliance to preserve options and enhance safety) with following considerations:

2. Allow the Master Plan Update to fully assess scheduled and charter service activities and assess the current and future design aircraft, which will establish the proper sizing of future airport infrastructure.

Specifically, we recommend that the Connecticut Department of Transportation:

1. Determine what the FAA intentions are concerning the AOC. Will its reissuance depend on, among other things, Part 139 requirements?

[10] An attempt to obtain data was made, but calls and email requests to the casinos and other trade representatives were not returned.

2. Establish a working dialog, possibly through a working committee, such as the Master Plan Advisory Committee or independent consultant, with regional chambers of commerce and other business leaders, including the two casinos, and airline representatives. The purpose of this is an open and candid discussion and interchange of ideas that focus on a single idea. What is the long-range potential for the GON, with particular emphasis on the possibility of the return of commercial air service?

3. Determine what the FAA's regional assessment of air service and airport capacity is for the region. Given the concentration of airports in the region, what are the FAA's forecasts for growth? This question will be analyzed in the master plan update.

Clearly, the long-term viability of commercial service at GON rests with development of the business market and whether the other regional commercial service airports can handle the growing demand as a visitor entrée to the Mystic Region.

There is no question the general aviation market is strong and will remain so. Aviation is clearly a component of other modes of transportation in the area, including trains, ferries and buses. However, without further detailed analysis as part of the master plan update, it is impossible to know if the market area will once again support reintroduction of schedule service or witness increased charter aircraft activity. The best approach for GON is to remain viable and in a position to support commercial service when the market is ready.